

SULFUR RESISTANT ADSORBENTS**ABSTRACT OF THE DISCLOSURE**

Sulfur resistant/tolerant adsorbents useful for separating olefins from paraffins in a cracked gas stream including hydrogen sulfide. The method comprises the steps of contacting the gaseous mixture with an adsorbent which preferentially adsorbs the alkene, at a selected temperature and pressure, thereby producing a non-adsorbed component and an alkene-rich adsorbed component; the adsorbent comprising a carrier having a surface area, the carrier having been impregnated with a silver compound by incipient wetness, the silver compound releasably retaining the alkene; and changing at least one of the pressure and temperature to thereby release the alkene-rich component from the adsorbent. The adsorbent substantially maintains its adsorbent capacity and preference for the alkene in the presence of the sulfur compound. Sulfur resistant/tolerant adsorbents useful for selectively separating dienes from a mixture, particularly one containing mono-olefins and hydrogen sulfide, are also disclosed.

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